

## SYSTEM FOR ENABLING LIMITED TIME TRIAL PRODUCTS

This invention relates generally to power toothbrushes and similar products, such as other personal appliances and more specifically concerns the enabling of those products for permanent (long-term) or other additional use after a trial period of use has concluded.

5 It is common practice in many industries to permit a potential customer a short time trial use of a product prior to a purchase decision. This practice has been successful, for example, for various software products and related services, where the use of the software is available for a limited time and then automatically terminates unless the user decides to purchase or license the product/service. It has also been used with other products, where  
10 actual use and satisfaction is a critical part of a purchasing decision, particularly where actual use convinces a potential customer to purchase when otherwise a purchase might not even be considered.

One example of a product where a period of trial use is helpful in making a purchase decision is a power toothbrush, which typically costs 20-30 times that of a  
15 manual toothbrush. Many potential customers for a power toothbrush will not consider such a purchase until they have experienced the benefits of the toothbrush during a trial period of actual use. The beneficial results of the power toothbrush then are apparent to them and they are then and only then willing to purchase. This is likely true for many other commercial products as well, such as other personal care products, including shavers.  
20 The concept of a trial use of a relatively expensive commercial product, such as a power toothbrush, is described in co-pending patent application Serial No. 09/588,807, owned by the assignee of the present invention.

In such a case, the "trial" unit is basically a commercial unit, with full functional capability, but modified in some way to operate only for a specific limited time. A  
25 disadvantage of such a trial toothbrush or similar product, however, is that after the trial period is over, the apparatus is discarded.

It is desirable to maintain the basic concept of a trial unit, for products like power toothbrushes or other personal care appliances, which are fundamentally identical to a commercial unit, but which can be enabled by a specific action for permanent (long-term)  
30 or additional short-term or other use after the trial use time has been completed and the customer has arranged for payment.

Accordingly, the present invention, in one aspect, is a system for enabling limited time trial use products for additional preselected use, comprising: A power appliance which has been adapted for limited time trial use; and an enabling device provided to the user following authorization to enable the appliance for said additional use.

5 In another aspect, the invention is a system for enabling a limited time trial use product for additional preselected use, comprising; a power appliance that has been adapted for limited time trial use; and a communication element associated with the power appliance for receiving enabling message from an external source over a communication line and wherein the appliance includes a circuit for enabling the appliance for said 10 preselected additional use in response to the communication element which has received an enabling message.

Another aspect of the present invention includes a system for enabling limited time trial use products for long-term use comprising: a power appliance that has been adapted for limited time trial use but otherwise has a full operational capability of a conventional 15 version thereof, wherein the power appliance includes a portion thereof that enables the device for long-term use upon a selected one of 1) actuation and 2) de-actuation thereof.

A further aspect of the invention includes a system for enabling limited time trial use of products for long-term use, comprising: A power appliance that has been adapted for limited time trial use, the power appliance including an on/off switch, operable by a user in 20 a particular pattern, and wherein the power appliance includes a recognition circuit for recognizing a preselected pattern of operation of the on/off switch, the power appliance being enabled for long-term use following recognition of the select pattern.

Figures 1A, 1B and 1C show one embodiment of the present invention.

Figure 2 shows one alternative embodiment of the present invention.

25 Figure 3 shows another embodiment of the present invention.

Figure 4 shows another embodiment of the present invention.

Figure 5 is a simple flowchart showing the sequential steps of the enabling system of the present invention.

30 Figure 1 illustrates a first embodiment of the present invention in which, following a period of trial use, the user communicates with the manufacturer or a designated third party, such as a retail store or a dentist (in the case of a power toothbrush), to provide to the user an enabling element or device of some kind, following a payment by the user, to

enable permanent operation (long-term, without a predetermined expiration) of the product. Figure 1 shows for illustration a power toothbrush 10 and an assembly or device 12 into which the toothbrush can be inserted, which will communicate with the product, *i.e.* the power toothbrush 10, to permanently enable the operation of the toothbrush, or other 5 product, including specifically, other personal care appliances, such as shavers. This could include coded information, which is recognized by the microprocessor 13 in the toothbrush, which would then enable the toothbrush in accordance with programmed instructions.

Communication between device 12 and toothbrush 10 can be accomplished in 10 various ways, such as magnetic action between a magnetic element 14 in device 12 and a corresponding magnetic element 16 in toothbrush 10. Alternatively, the communication could be optical, infrared (Ir) or RF (radio frequency). Other communication means could also be used. In all cases, the result is communication with the toothbrush (or other product), which results in the enablement of the toothbrush for permanent operation.

15 Alternatively to permanent operation, the enablement could be for an additional trial period or a period of use beyond a trial use, such as for one year, or the expected life of the brushhead. The cost of the enablement would depend upon the specific enablement requested. In addition, the enablement might be for specific functions only, such as a programmable timer or battery charge indicator or specific brushhead action.

20 In a variation of the arrangement of Figure 1, the device 12 is a charger assembly for the toothbrush, which would serve both to periodically charge the batteries in the toothbrush and also to provide communication with the toothbrush to enable permanent operation. This could include the various communication means discussed above, or it could involve a particular physical or electronic relationship with a given toothbrush such 25 that the charger can only operate properly with the given toothbrush or other product. In such a case, the charger cannot be used to enable other toothbrushes.

30 In another variation of the embodiment of Figure 1, which is shown in Figure 2, an element or device is purchased by the user to enable the trial unit for long-term use (or other use as described above), a small, separate component 17 is integrated by the user into the toothbrush 10 through an opening 19 provided in the wall of the handle portion of the toothbrush. The additional element could, for instance, be used to complete an electrical circuit, which has opened at the end of the trial period, which results in enabling the device

for permanent operation. Still further, the product (toothbrush) could be adapted to receive a keycard, which could be inserted into the product and then removed, the keycard either enabling communication with the product for thereafter enabling the product, or providing coded information recognizable by the product which results in its enablement. In such a 5 case, the product would typically have a specific ID for communication.

The above embodiments, however, all include the basic feature that the user, by a purchase decision, receives an element or assembly which, when added or coupled to the product in a prescribed manner, results in the enabling of the product for permanent (long-term, *i.e.* no predetermined expiration) operation or for other specific operation described 10 above.

A second basic embodiment involves communication via telephone, cellular link or other communication line between the product and a component of the product and the manufacturer or other authorized third party for enablement of the product. In this 15 arrangement, shown in Figure 3, a "smart" communication element 20 in a charger portion 21 of the toothbrush 22 or other personal care appliance (shaver, etc.) or other product is plugged into a phone line or other communication link 24. The communication line could, for instance, be an Internet access line. When payment for the permanent operation is made, the manufacturer or other authorized party 26 will activate the trial product in the possession of the user over the line, through the communication element 20 using an 20 authorized communication protocol. The communication element 20 activates the appliance by communication with the microprocessor 23 or similar circuit in the appliance. In this embodiment, a communication protocol, instead of an actual element, is provided to the user, over a communication link.

This arrangement has certain advantages in simplicity, as well as reliability in 25 ensuring that the trial product is enabled. The smart communication element 20 in the product 22 could be in a charging base for the toothbrush or in any other portion of the toothbrush. The user merely has to make the appropriate physical connection between element 20 and the communication line.

In addition to the enablement of operation of the product, a communication line 30 connection could be used to perform remote diagnostics on the product to ensure/maintain proper operation of the product. It would also be used to ensure compliance in clinical situations for a toothbrush.

Figure 5 shows a simplified flowchart involving the first and second embodiments, in which a particular product, such as a power toothbrush, is sold in a trial use mode, as represented by block 30. During or following the trial use, a decision is made by the user to purchase a “permanent” version of the product, as shown in block 32. Other versions 5 could also be purchased, including short-term usage or specific features (instead of the full function device). Contact is made with the manufacturer or other authorized party to enable the product, with accompanying payment, as shown in block 34. An element or device is provided to the user to enable conversion of the product to the desired operation status, as shown by block 36, or the product or accessory therefor, such as a charging unit, 10 is connected via a communication link to the manufacturer or other authorized party, as shown in block 38. The product is now capable of permanent (long-term) use, *i.e.* basically identical in operation to the non-trial use products purchased through regular commercial channels, as represented by block 40, or other desired use/configuration. In both of these embodiments, the discarding of the trial use device is eliminated.

15 In another embodiment, shown in Figure 4, the user is provided with a particular “code” for operating the existing on/off switch 41 of the product (shown as a power toothbrush) 42, following payment. Operating the on/off switch 40 with a particular pattern over a selected period of time will result in enablement of the product for permanent (or selected other) use. The microprocessor 44 in the product is programmed to 20 recognize the pattern from the on/off switch then to convert the product to permanent use. While this embodiment may in some cases experience difficulties if the user cannot properly carry out the specified on/off, it does have advantages in simplicity and lack of any additional expense in the enablement process.

25 In still another embodiment, a “physical” conversion of a portion of a circuit in the toothbrush or other product is used to produce permanent operation. For instance, when the product is in its trial mode, there may be a physical connection or link which prevents further operation of the product after a particular set time or number of uses of the product. Upon payment by the user, the product may be taken to a local authorized outlet, such as a dentist’s office or other outlet, where the product may be passed through an enabling 30 apparatus which either opens (blows) the existing disabling circuit link or produces a demagnetizing or other function in the product, in each case removing a blocking element or operating condition in the product which otherwise prevents permanent operation. This

embodiment has the advantage of ensuring the enablement of the product without any action on the part of the user, other than a visit to a local outlet.

In still another embodiment, an initial period of enablement for a toothbrush (or other product using a replaceable workpiece) could be the expected life of the brushhead.

5 Purchase of a new brushhead could then enable the product for the expected life of the new brushhead, *i.e.* six months.

In all of the above embodiments, there is a conversion operation of some kind involving an element of the product or communication with the microprocessor in the product, which is programmed to enable permanent (or other desired) operation of the 10 product. Various means of communication with the product can be used. Conversion may occur by changing the operating state of existing elements of the product or in some cases may be accomplished by the actual physical elimination or addition of elements needed to produce such operation.

All of these embodiments, however, convert a power toothbrush or similar product, 15 which has been initially set up for short-time trial use into a permanent operating device for normal use, in one example. The "enabled" product is identical in operation, function and appearance to a product which was initially purchased for full price. In other examples, the enablement could be for additional times of use (but not permanent) or could be for specific features only.

20 This system has the advantage of permitting a user to have a trial use of a product which otherwise might not have been purchased or even considered, without discard of the trial unit. A trial unit which has been permanently and completely enabled is identical in operation and function to a product conventionally purchased. Hence, there is an incentive for the user to enable the trial use unit, as opposed to purchasing a new product which is 25 already configured for permanent use. The present invention thus provides an operation step or feature for a trial unit to enable the trial product without discarding of the trial unit. Trial use products thus become truly practical. The trial use product, as explained above, is advantageous, as it permits customers who are initially skeptical or even adverse to experience the advantages of the product and thus make an informed decision concerning 30 purchase.

Although several embodiments have been disclosed for purposes of illustration, it should be understood that various changes, modifications and substitutions might be

incorporated in the invention without departing from the spirit of the invention, which are defined by the claims, which follow.